

tesutural dark brown band, which becomes broader towards the lip. Found on leaves of bushes at Tanhay, in the Isle of Negros.

k. Ground-colour very pale yellow-brown; a brown circumferential band, which is only perceptible on the latter half of the last volution. From Loboc.

l. Shell of an uniform pale brownish colour. From Loboc.

m. *Apex* reddish-brown; upper part of the shell pale yellowish brown, increasing rapidly in intensity, so that nearly the whole of the last volution is of a dark chocolate-brown; *columella* white; lip nearly black. From Loboc.

MICROSCOPICAL SOCIETY.

At a meeting of the Microscopical Society held July 21st, J. S. Bowerbank, Esq., in the Chair, a paper was read from the Rev. J. B. Reade, M.A., F.R.S., on the process of charring vegetable tissue, as applied to the examination of the stomata in the epidermis of Garden Rhubarb. The author, after mentioning the great advantages derivable from charring objects for the microscope, which he first suggested, goes on to state that it is peculiarly advantageous for exhibiting delicate membranes, which cannot from their transparency be well seen by the ordinary method of viewing objects, in water between glasses. It having long been a disputed point with botanists, whether the stomata in plants were open or closed by a membrane, the author was led to examine the subject, and for this purpose took the cuticle of the common garden rhubarb, which was obtained by macerating the sheaths investing the flower-stalks for a few days in water and then charring it; from his observations he arrives at the following conclusions: That the application of the process of charring proves beyond a doubt, that the stomata in this tissue of the rhubarb are distinct openings into the hollow chambers of the parenchyma of the leaf; that the perforation is the rule and not the exception in the structure; and that the exception, where it exists, *i. e.* where the stomata are closed, proves the existence of the overlying membrane discovered and described by Dr. Brown. Some discussion then followed, in which Messrs. Gray, Lindley, and Quekett took a part.

MISCELLANEOUS.

Analogies of European and Indian Geology.—“Notwithstanding the difficulty of establishing the identity in remote quarters of the world, of rocks so vaguely characterized as the saliferous marls, yet when we have coal-measures affording a certain fixed point, or landmark to guide us, we cannot be very far out in fixing upon the green marls, or often friable sandstone, which extend along the lower ridges of many parts of the great Himalayan chain, immediately adjoining the plains of Hindostan, as the Indian equivalent of the beds in question. Along the southern side of Assam we have the same rocks as well as brine-springs, and an earthy limestone, probably

equivalent to the English lias. On the face of the Cherra mountain the green marl rests unconformably on old red sandstone (or that on which the coal formation rests), and gives support to the deposits of sand in which the marine remains are contained. It is here by no means destitute of fossils as in other localities; on the contrary, we found in it six species of univalve shells, a small species of *Echinus* and a large spined *Cidaris*. In a note which we made on the characters of a fragment of rock brought away from a submerged reef near Arracan, by the hull of a ship which struck upon it, we pointed out the resemblance between its appearance and that of the green conglomerates in question*.

“A description of the salt formations at the head of the Indus, and their relative position to the coal-measures recently found there by Mr. Jameson, will be the means of casting much important light on this subject in regard to India, and we have fortunately in the gentleman alluded to a geologist near the spot, fully alive to the importance of this and other questions of a similar nature. Another equally important question is the situation of the great repositories of salt in the vicinity of Ajmeer and other situations in Central India, where salt lakes abound. Lieut. Fraser, of the Engineers, we recollect, sent us a fragment of rock-salt, which was found imbedded in a basaltic rock when sinking a well at Mhow, about three feet from the surface. We have not heard that this curious fact has led to any further discovery or research in the neighbourhood alluded to.

“It would be extremely important if we could establish good distinguishing characters between the limestone of the coal-measures and that of the more ancient formations, but this, if a matter of difficulty in England, is at least an equally difficult thing in India. It is true, the subject has here been as yet little investigated, but we cannot place the least confidence in those practical men who employ names without thinking of their meaning, and speak confidently of lias, and carboniferous limestone, primitive limestone, &c., according as they happen to suppose any particular specimen they meet with in India to be one or other. The limestone so abundant in Kemaon, as to form the greater portion of that mountainous district, is so much like the limestone of the coal-measures at Cherra Ponji, that no one unacquainted with the peculiar relations of the two rocks would suppose them to be at all different. The geologist, however, perceives the vast difference between them at once: the one reposes on clay-slate, the other on sandstone; the one occurs in thick continuous beds, the other alternates with shale; the one abounds in fossils, which scientific men alone would think of looking for, and in the other the geologist alone would know that he might look for fossils in vain. Speaking of the difference between the limestone of the Silurian system and that of Coalbrook dale, Mr. Murchison says, that the organic remains, which are in great profusion in the latter, consist of shells and corals which are characteristic of the carboniferous limestone in many other parts of Great Britain, and *never* occur in

* Journ. Beng. As. Soc. 1838, p. 936.

the inferior limestones of the Silurian system. Among these the most prominent are the large *Productus hemisphericus*, and many corals, including *Lithodendron sexdecimale* (*Clodocora* of Ehrenberg), which is so abundant that it constitutes the greater part of the layers of black calcareous shale which divide the beds of limestone. The black limestone in which these remains are found is overlaid by a sandstone which separates it from the productive coal-beds, and is underlaid by strata belonging to the lower limestone.

“Mr. Murchison particularly alludes to a specimen of *Lithosortion floriforme*, a species of coral two feet five inches broad by one and a half high, which appeared in a quarry to retain the original position in which it grew, and conveyed the impression that it had remained undisturbed beneath the sea, while fine red sand at one time, and mud at another, were deposited around it.

“These corals are also found in the limestone of the Cherra Ponji coal-measures; and in a large heap of limestone collected by Mr. Inglis of Chatack, for the purpose of burning for lime, I found the first fossil I had observed in a similar rock in India, thus indicating the presence of a coal district. The object of the journey would not, however, admit of my visiting the quarry, but there can be no question that the rock alluded to is connected with the numerous indications of coal formations that have been found in that vicinity. One other corresponding character may be mentioned between the Cherra Ponji coal-beds and those of Coalbrook dale, namely, that the coal-measures do not graduate downwards into the older rocks. The limestone of Cherra, which alternates with beds of sandstone and shale, seems to rest immediately on the old red sandstone, as in the Coalbrook dale beds. Mr. Murchison observes, that the carboniferous limestone has not in Coalbrook dale any regular downward passage into the old red sandstone, as in other districts; on the contrary, the old red terminates at the southern end of the tract, and has never been found beneath the coal-measures. On the north bank of the Severn the underlying stratified rocks throughout the productive coal-field consists of various members of the Silurian system.

“Mr. Murchison concludes his observations on this coal-field by a notice of the faults and dislocations occasioned by trap rocks. The district affords proofs of having been raised up from beneath the surrounding new red sandstone in separate wedge-shaped tracts, the most remarkable dislocation being that which bounds the coal-field to the east. The coal-measures along this line are not less than 1000 feet thick, and as some of the lower seams of coal are thrown up to the level of the overlying strata of new red sandstone, the upcast is thus shown to have exceeded 1000 feet, though to what further extent has not yet been ascertained. It will be recollected that we formerly explained the elevated position of the Cherra coal-measures in precisely the same way that Mr. Prestwich and Mr. Murchison now account for the great upcast of the Coalbrook dale field*, the only difference in the two cases being, that in India the

* See Report of a Committee for investigating the Coal and Mineral Resources of India. Calcutta, 1838, p. 24.